WEST Search History

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DATE: Thursday, July 15, 2004

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		DB=USPT,PGPB,EPAB,DWPI; PLUR=YES; OP=ADJ	
☐	L1	dorsel-A$.in. or king-D$.in. or Sampas-N$.in.	1357
☐	L2	L1 and array	178
☐	L3	array and (detector and processor)	33989
☐	L4	L3 and (detector same (optical and wavelength and angle))	1624
☐	L5	L4 and (processor same signal)	1179
☐	L6	L5 and (interrogat$3 near light)	12
☐	L7	L5 and (light source)	860
☐	L8	L7 and optical axes	63
☐	L9	L8 and (multiple and different)	56
☐	L10	L9 and (reader and code)	4
☐	L11	L9 and (scan$ and light spot)	2
☐	L12	L9 and (seat near unit)	0
☐	L13	L9 and (seat near unit)	0
☐	L14	L9 and seat	1
☐	L15	L2 and L3	35
☐	L16	dorsel-A$.in. or king-D$.in. or Sampas-N$.in.	1357
☐	L17	L16 and array	178
☐	L18	array and (detector and processor)	33989
☐	L19	L18 and (detector same (optical and wavelength and angle))	1624
☐	L20	L19 and (processor same signal)	1179
☐	L21	L20 and (interrogat$3 near light)	12
☐	L22	L20 and (light source)	860
☐	L23	L22 and optical axes	63
☐	L24	L23 and (multiple and different)	56
☐	L25	L24 and (reader and code)	4
☐	L26	L24 and (scan$ and light spot)	2
☐	L27	L24 and (seat near unit)	0
☐	L28	L24 and (seat near unit)	0
☐	L29	L24 and seat	1
☐	L30	L17 and L18	35

☐	L31	5837475 or 5874219 0r6078390 or 6406849	39
☐	L32	5874219 or 6078390	536
☐	L33	5874219.pn. or 6078390.pn.	4
	DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI; PLUR=YES; OP=ADJ		
☐	L34	(adjust$ or mov$ or rotat$) same ((mutliple or plurality or two or more) near (detector or processor or detecter))	2775
☐	L35	((adjust$ or mov$ or rotat$) same ((mutliple or plurality or two or more) near (detector or processor or detecter)))	2775
☐	L36	L35 same wavelength	158
☐	L37	L36 same (different same angle)	14
☐	L38	L36 same addressable array	0
☐	L39	L36 same array	14
☐	L40	L39 and (PMT or photomultiplier or CCD or avalanche photodiode)	7
	DB=PGPB; PLUR=YES; OP=ADJ		
☐	L41	10/080641	2
☐	L42	L41 AND ADUSTABLE DETECTION ANGLE	0
☐	L43	L41 AND ADJUSTABLE	1
☐	L44	(INTERROGAT$ NEAR WAVELENGTH) SAME (ADJUST$ SAME ROTAT$ OR MOV$)	2
☐	L45	L41 AND (ADJUST$ OR ROTAT$ OR MOV$)	1
☐	L46	6406849.PN. OR 5837475.PN.	0
	DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI; PLUR=YES; OP=ADJ		
☐	L47	6406849.PN. OR 5837475.PN.	5
☐	L48	L47 and (adjust$ or mov$ or rotat$)	1
☐	L49	L47 and (angle)	0

END OF SEARCH HISTORY

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                   and WATER from CSA now available on STN(R)
 NEWS 10  Jul 12   BEILSTEIN enhanced with new display and select options,
                   resulting in a closer connection to BABS

 NEWS EXPRESS  MARCH 31 CURRENT WINDOWS VERSION IS V7.00A, CURRENT
               MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
               AND CURRENT DISCOVER FILE IS DATED 26 APRIL 2004
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=> s (multiple or plural? or two) (5a) (detector or charg## coup### device or CCD
or PMT or photomultiplier tube)
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L1        8614 (MULTIPLE OR PLURAL? OR TWO) (5A) (DETECTOR OR CHARG## COUP###
               DEVICE OR CCD OR PMT OR PHOTOMULTIPLIER TUBE)

=> s l1 and (adjust? or rotat? or mov?)
L2         826 L1 AND (ADJUST? OR ROTAT? OR MOV?)

=> s l2 and (interrogat? (3a) (light or wavelength))
L3           0 L2 AND (INTERROGAT? (3A) (LIGHT OR WAVELENGTH))

=>         s l2 and detect### angle
L4           0 L2 AND DETECT### ANGLE

=> s l2 and wavelength#
L5          80 L2 AND WAVELENGTH#

=> s l5 and optical ax###
L6           0 L5 AND OPTICAL AX###

=> s l5 and optical
L7          37 L5 AND OPTICAL

=> dup rem l7
PROCESSING COMPLETED FOR L7
L8          29 DUP REM L7 (8 DUPLICATES REMOVED)

=> d ibib abs l8 1-29

L8   ANSWER 1 OF 29  CAPLUS  COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER:        2004:371142  CAPLUS
DOCUMENT NUMBER:         140:371437
TITLE:                   Plasmonic and/or microcavity enhanced optical
                         protein sensing and molecular sensor
INVENTOR(S):             Drachev, Vladimir; Shalaev, Vladimir; Zhang, Dongmao;
                         Ben-Amotz, Dor
PATENT ASSIGNEE(S):      Purdue Research Foundation, USA
SOURCE:                  PCT Int. Appl., 27 pp.
                         CODEN: PIXXD2
DOCUMENT TYPE:           Patent
LANGUAGE:                English
FAMILY ACC. NUM. COUNT:  1
PATENT INFORMATION:

     PATENT NO.        KIND  DATE           APPLICATION NO.  DATE
     ---------------   ----  --------       ---------------  --------
     WO 2004038349      A1   20040506       WO 2003-US34085  20031024
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
             PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ,
             UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD,
             RU, TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG,
             CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC,
             NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
             GW, ML, MR, NE, SN, TD, TG
PRIORITY APPLN. INFO.:                  US 2002-420904P  P  20021024
AB   Instruments for mol. detection at the nanomolar to femtomolar concentration
level
     include a longitudinal capillary column (10) of known wall thickness and
     diameter  The column (10) contains a medium (24) including a target mol. (30)
     and a plurality of optically interactive dielec. beads (26) on the order
     of about 10-6 meters up to about 10-3 meters and/or metal nanoparticles
     (31) on the order of 1-500 nm.  A flow inducer (34) causes longitudinal
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movement of the target mol. within the column (10). A laser (14) introduces energy laterally with respect to the column (10) at a **wavelength** and in a direction selected to have a resonant mode within the capillary column wall (12) and couple to the medium (24). A detector (40) is positioned to detect Raman scattering occurring along the column (10) due to the presence of the target mol.

L8 ANSWER 2 OF 29 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 2004:477017 SCISEARCH
THE GENUINE ARTICLE: 820IM
TITLE: A flux- and background-optimized version of the NanoSTAR small-angle X-ray scattering camera for solution scattering
AUTHOR: Pedersen J S (Reprint)
CORPORATE SOURCE: Aarhus Univ, Dept Chem, Langelandsgade 140, DK-8000 Aarhus C, Denmark (Reprint); Aarhus Univ, Dept Chem, DK-8000 Aarhus C, Denmark; Aarhus Univ, iNANO Interdisciplinary Nanosci Ctr, DK-8000 Aarhus, Denmark
COUNTRY OF AUTHOR: Denmark
SOURCE: JOURNAL OF APPLIED CRYSTALLOGRAPHY, (JUN 2004) Vol. 37, Part 3, pp. 369-380.
Publisher: BLACKWELL MUNKSGAARD, 35 NORRE SOGADE, PO BOX 2148, DK-1016 COPENHAGEN, DENMARK.
ISSN: 0021-8898.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 34

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB A commercially available small-angle X-ray scattering camera, NanoSTAR from Bruker AXS, has been modified to optimize its use for weakly scattering solution samples. The original NanoSTAR is a pinhole camera with two Gobel mirrors for monochromating and making the beam parallel, and with a **two**-dimensional position-sensitive gas **detector** (HiSTAR) for data collection. The instrument has one integrated vacuum. It was constructed for position-resolved studies and thus has a small beam size at the sample position. In the present work, the instrumental configuration has been optimized by numerical calculations based on phase-space analysis and Monte Carlo simulations in order to obtain a higher flux. This has led to a setup in which the beam at the sample is larger and the collimation part of the instrument is longer, so that divergence of the beam is similar to that of the original camera. An extra pinhole is included after the Gobel mirrors to make the beam size well defined after the mirrors. The camera thus has genuine three-pinhole collimation. The use of electron-microscope pinholes minimizes parasitic scattering. At the University of Aarhus, the modified camera is installed on a powerful **rotating**-anode X-ray source (MacScience 6 kW Cu with a 0.3 x 0.3 mm effective source size). Measurements have been performed on a wide variety of weakly scattering samples, such as surfactant micelles, homopolymer solutions, block copolymer micelles, proteins etc. The data are routinely converted to absolute scale using the scattering from water as a primary standard. The standard configuration covers the range of scattering vectors from 0.01 to 0.35 Angstrom(-1) with a flux of 1.7 x 10(7) photons s(-1) for Cu Kalpha radiation at a generator power of 4.05 kW. The camera is easily converted to a high-resolution version covering 0.0037 to 0.22 Angstrom(-1) with a loss of flux of about a factor of 10, as well as to a position-resolved version.

L8 ANSWER 3 OF 29 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 2003:265577 SCISEARCH
THE GENUINE ARTICLE: 655BB
TITLE: Spectroscopic system using image magnifying optics for plasma velocity and ion temperature measurement
AUTHOR: Sakakita H (Reprint); Kiyama S; Hirano Y; Yagi Y; Koguchi

H; Sekine S; Shimada T; Hirota I; Maejima Y
CORPORATE SOURCE: AIST, Energy Elect Inst, Tsukuba 2, 1-1-1 Umezono, Tsukuba, Ibaraki 3058568, Japan (Reprint); AIST, Energy Elect Inst, Tsukuba, Ibaraki 3058568, Japan
COUNTRY OF AUTHOR: Japan
SOURCE: REVIEW OF SCIENTIFIC INSTRUMENTS, (MAR 2003) Vol. 74, No. 3, Part 2, Sp. iss. SI, pp. 2111-2114.
Publisher: AMER INST PHYSICS, CIRCULATION & FULFILLMENT DIV, 2 HUNTINGTON QUADRANGLE, STE 1 N O 1, MELVILLE, NY 11747-4501 USA.
ISSN: 0034-6748.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 16

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB A spectroscopic system equipped with image magnifying optics has-been developed for measuring a time-resolved plasma velocity at one discharge of a reversed-field-pinch plasma of the TPE-RX at National Institute of AIST. This spectroscopic system enables a simultaneous measurement from two different lines of sight, using two sets of quartz **optical** fiber bundles. This system provides a precise measurement of Doppler shift without the need for a calibration of the central location of a spectral line. Two fiber bundles are coupled to the entrance slit of a modified Czerny-Turner-type, 1-m-focal-length spectrometer with an 82 X 82 mm(2) grating. In order to **adjust** the spectral image of the exit slit to each surface of **two** sets of one-dimensional **detector** arrays, an **optical** system equipped with a toroidal mirror, a cylindrical mirror, and splitting mirrors has been developed. The focal lengths of the toroidal mirror are selected for focusing vertically on the splitting mirror and horizontally (**wavelength** direction) on detectors. Plasma **rotation** and ion temperature for 0 V impurity ions (278.1 nm) are successfully measured at one plasma shot with a 25-mus time resolution in the TPE-RX. (C) 2003 American Institute of Physics.

L8 ANSWER 4 OF 29 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN DUPLICATE 1
ACCESSION NUMBER: 2003:743394 SCISEARCH
THE GENUINE ARTICLE: 714CM
TITLE: Development of a multi-spectral imaging system for medical applications
AUTHOR: Vo-Dinh T (Reprint); Cullum B; Kasili P
CORPORATE SOURCE: Oak Ridge Natl Lab, Adv Biomed Sci & Technol Grp, Oak Ridge, TN 37831 USA (Reprint)
COUNTRY OF AUTHOR: USA
SOURCE: JOURNAL OF PHYSICS D-APPLIED PHYSICS, (21 JUL 2003) Vol. 36, No. 14, pp. 1663-1668.
Publisher: IOP PUBLISHING LTD, DIRAC HOUSE, TEMPLE BACK, BRISTOL BS1 6BE, ENGLAND.
ISSN: 0022-3727.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 14

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB We describe the development of a multi-spectral imaging (MSI) system based on a rapid-scanning solid-state device, an acousto-optic tunable filter (AOTF), for **wavelength** selection and a **two** -dimensional **charge-coupled device** for detection. The MSI device is designed for in vivo **optical** detection in medical diagnostic applications. Unlike conventional grating spectrometers, the AOTF is a miniature solid-state device that has no **moving** parts, and can be rapidly tuned to any **wavelength** within its operating range. The large aperture of the AOTF and its high spatial resolution allows the **optical** image from an imaging fibre optic probe to be recorded by the detector. These characteristics, combined with their small size, make AOTFs important new alternatives to

conventional monochromators, especially for spectral imaging in biomedical applications. The MSI can also be used for dual-modality diagnostics to detect both fluorescence and diffuse reflectance images. The usefulness and potential of the MSI system is illustrated in several applications of biomedical interest, such as reflectance fluorescence imaging of skin and brain tissues.

L8 ANSWER 5 OF 29 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:935060 CAPLUS
DOCUMENT NUMBER: 141:3763
TITLE: Biochip analyzer
INVENTOR(S): Lu, Zukang; Wang, Liqiang
PATENT ASSIGNEE(S): Zhejiang University, Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 6 pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1385690	A	20021218	CN 2002-112040	20020609

PRIORITY APPLN. INFO.: CN 2002-112040 20020609
AB The analyzer consists of two light source with different **wavelength**, reflector of parallel device, full-reflector, perforated reflector, oscillation mirror, biochip, scanning object prism, lens on the biochip, linear guide rail, collecting mirror, confocal orifice, **two** color disks, and photoelec. **detector**. The emitting light from the second light source is reflected by reflector, then through the holes of perforated reflector, and enters into the oscillation mirror. The emitting light from the first light source is reflected by the full-reflector, then through the holes of the perforated reflector, and enters into the oscillation mirror. The oscillation mirror is installed on a rotary axis, and can be swung. The scanning object lens is installed the **optical** passage between the oscillation and biochip, and can convert the light from different direction into linear shift light. Prism is also installed on the **optical** passage, and can deflect the light from the scanning object lens to the biochip. The biochip is installed on the linear guide rail, and can **move** by the step elec. motor. The fluorescent light from the biochip enter into the prism, then into oscillation mirror after deflection by prism and conversion by scanning object lens. The light reflected by the oscillation mirror enter into the perforated reflector. The collecting mirror and confocal orifice are installed along the reflection light direction on the **optical** passage of the perforated lens, and vertical to the **optical** passage and in the same plane. The first orifice corresponding to the first color disk is installed between the first light source and full-reflector; and the second orifice corresponding to the color disk installed between the second light source and reflector. When the first orifice is open, the second orifice is close, and the first color disk is on the **optical** passage; and when the first is close, the second orifice is open, and the second color disk is on the **optical** passage.

L8 ANSWER 6 OF 29 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:366782 CAPLUS
TITLE: Set-up of measuring instruments for the parallel readout of spr sensors
INVENTOR(S): Dickopf, Stefan; Schmidt, Kristina; Vetter, Dirk
PATENT ASSIGNEE(S): Graffinity Pharmaceutical Design Gmbh, Germany
SOURCE: PCT Int. Appl.
CODEN: PIXXD2
DOCUMENT TYPE: Patent

LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000031515	A1	20000602	WO 1999-EP8977	19991116
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
DE 19955556	A1	20000608	DE 1999-19955556	19991116
EP 1131618	A1	20010912	EP 1999-958102	19991116
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
AU 751246	B2	20020808	AU 2000-15559	19991116
US 2002001085	A1	20020103	US 2001-859677	20010518
US 6441906	B2	20020827		

PRIORITY APPLN. INFO.: DE 1998-19854370 A 19981120
WO 1999-EP8977 W 19991116

AB The invention relates to a set-up of measuring instruments for the parallel readout of SPR sensors. The aim of the invention is to provide a measuring arrangement for the parallel readout of a plurality of SPR sensors wherein the readout process should be terminated within an integration period of less than 30 minutes. To this end, a **wavelength**-selective component (5) and an **optical** imaging system (L2, L3) are arranged downstream of a light source (3). Said **optical** imaging system (L2, L3) is designed in such a manner that at a first **wavelength** it guarantees a parallel illumination of the light incidence ends of waveguides (13) which are provided with SPR-compatible sensor zones and that the light emitted from the individual **optical** waveguides (13) can be simultaneously imaged onto a CCD chip (20) via an **optical** device (L4) in such a way that the light emitted by every single **optical** waveguide (13) can be detected by a respective **plurality** of adjacent **CCD** pixels of the CCD chip (20). A light intensity value can be calculated from these pixel arrays by means of an image processing software. Once the intensity value, **adjusted wavelength** and coordinate in the waveguide array (10) is stored by a memory (30) via a control line (31), the **wavelength**-selective component (5) can be **adjusted** to a second and freely selectable further **optical wavelength**.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 7 OF 29 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1999:582629 CAPLUS
DOCUMENT NUMBER: 131:188960
TITLE: Method for detecting harmful gases which is applicable to broad gas concentration range
INVENTOR(S): Tanaka, Kazunari; Igarashi, Chiaki; Sadaoka, Yoshihiko
PATENT ASSIGNEE(S): Ebara Corporation, Japan
SOURCE: U.S., 13 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5952237	A	19990914	US 1996-728529	19961009
US 6117686	A	20000912	US 1999-365725	19990803

PRIORITY APPLN. INFO.: JP 1996-270290 A 19961018
JP 1995-270290 A 19951018
US 1996-728529 A1 19961009

AB The present invention provides a method by which harmful trace gases in a gaseous mixture containing as such harmful halogen gases, halogenated hydrogen gases, acid gases, oxidizing gases, basic gases, organic acid gases, especially halogen gases or halogenated hydrogen gases, are detected by using tetraphenylporphyrin (TPP) and quantitated from a calibration curve constructed therefrom, where the range of detectable concentration is made **adjustable** so that harmful gas can be detected and quantitated over a broad range of concentration Also, this invention also provides a method for extending the accessible range of gas concentration by **adjusting** the sensitivity of the detector material via control of tetraphenylporphyrin concentration in matrix polymer of the detector material, by controlling the gas concentration range via measurement at a specific **wavelength**(s), and using a **plurality** of **detector** materials with pre-set assay sensitivity.

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 8 OF 29 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN DUPLICATE 2
ACCESSION NUMBER: 1999:368776 SCISEARCH
THE GENUINE ARTICLE: 193AU
TITLE: Single-beam integrating sphere spectrophotometer for reflectance and transmittance measurements versus angle of incidence in the solar **wavelength** range on diffuse and specular samples
AUTHOR: Nostell P (Reprint); Roos A; Ronnow D
CORPORATE SOURCE: UNIV UPPSALA, DEPT MAT SCI, S-75121 UPPSALA, SWEDEN (Reprint); MAX PLANCK INST FESTKORPERFORSCH, D-70569 STUTTGART, GERMANY
COUNTRY OF AUTHOR: SWEDEN; GERMANY
SOURCE: REVIEW OF SCIENTIFIC INSTRUMENTS, (MAY 1999) Vol. 70, No. 5, pp. 2481-2494.
Publisher: AMER INST PHYSICS, CIRCULATION FULFILLMENT DIV, 500 SUNNYSIDE BLVD, WOODBURY, NY 11797-2999.
ISSN: 0034-6748.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS; ENGI
LANGUAGE: English
REFERENCE COUNT: 20

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB A multipurpose instrument for the measurement of reflectance and transmittance versus angle of incidence for both specular and diffuse samples in the solar **wavelength** range has been constructed and evaluated. The instrument operates in the single-beam mode and uses a common light source for three experimental setups. Two integrating spheres, 20 cm in diameter, are used for diffuse transmittance and reflectance measurements. The transmittance sphere can be turned around an axis through the sample to vary the angle of incidence. The reflectance sphere uses a center mounted sample and a special feature is the position of the detector, which is mounted on the sample holder at the center of the sphere. This way the detector always sees the same part of the sphere wall and no light can reach the detector directly from the sample. The third setup is an absolute instrument for specular samples. It uses a small averaging sphere as a detector. The detector is mounted on an arm which **rotates** around the center of the sample, and it can thus pick up both the reflected and transmitted beams including all multiply

reflected components. The averaging sphere detector is insensitive to small side shifts of the detected beams and no **multiple** reflections between **detector** and **optical** system occur. In this report a number of calibration procedures are presented for the three experimental setups and models for the calculation of correct transmittance and reflectance values from measured data are presented. It is shown that for integrating sphere measurements, the geometry of the sphere and the diffusivity of the sample as well as the sphere wall reflectance and port losses are important factors that influence the result. For the center mounted configuration these factors are particularly important and special emphasis is given to the evaluation of the reflectance sphere model. All three instrument setups are calibrated using certified reference materials and nonscattering mirrors and substrates. The results are also compared to the results of a double-beam Beckman integrating sphere for near normal angles of incidence and Fresnel calculations. The results in this article show that good agreement is obtained between results from the different instruments if, and only if, proper evaluation procedures are applied to the measured signals. (C) 1999 American Institute of Physics. [S0034-6748(99)04305-1].

L8 ANSWER 9 OF 29 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1999:651728 CAPLUS
DOCUMENT NUMBER: 131:342128
TITLE: Measurement of enantiomeric purity by ratio chromatograms with a photometric **detector** using quartz plates as a **multiple** retarder
AUTHOR(S): Nakazawa, Hiroyuki; Yamada, Tomoko; Watanabe, Takaho; Yamamoto, Atsushi; Matsunaga, Akinobu; Nishimura, Masayuki
CORPORATE SOURCE: Department of Analytical Chemistry, Faculty of Pharmaceutical Sciences, Hoshi University, Tokyo, 142-0063, Japan
SOURCE: Analytica Chimica Acta (1999), 396(2-3), 125-130
CODEN: ACACAM; ISSN: 0003-2670
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The measurement of enantiomeric purity is presented using the dual-**wavelength** detection function of a spectrophotometric detector. Between enantiomers, this method measures the difference in the absorbance ratio at adjacent 1/4 **wavelengths** that are produced by a thin quartz plate placed on a flow-cell. The use of a split-type flow-cell achieved high sensitivity. Moreover, the determination of absolute quantities of the analyte was successful from the peak shape by **adjusting** the ratio of effluent velocity between the reference and sample cells to 1/3. This method was applied to the determination of camphor in pharmaceutical prepns.
REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 10 OF 29 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 1998:173073 SCISEARCH
THE GENUINE ARTICLE: YY455
TITLE: A broadband lidar for the measurement of tropospheric constituent profiles from the ground
AUTHOR: Povey I M (Reprint); South A M; deRoodenbeke A T; Hill C; Freshwater R A; Jones R L
CORPORATE SOURCE: UNIV CAMBRIDGE, DEPT CHEM, CTR ATMOSPHER SCI, LENSFIELD RD, CAMBRIDGE CB2 1EW, ENGLAND (Reprint)
COUNTRY OF AUTHOR: ENGLAND
SOURCE: JOURNAL OF GEOPHYSICAL RESEARCH-ATMOSPHERES, (20 FEB 1998) Vol. 103, No. D3, pp. 3369-3380.
Publisher: AMER GEOPHYSICAL UNION, 2000 FLORIDA AVE NW, WASHINGTON, DC 20009.

DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS
LANGUAGE: English
REFERENCE COUNT: 58

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB In this paper we describe a novel lidar that combines differential UV-visible absorption spectroscopy and the lidar technique. The critical and novel element of the system is the use of an imaging spectrometer in conjunction with a **two**-dimensional **CCD** **detector** array to simultaneously spectrally and temporally resolve backscattered radiation. To exploit this approach, the lidar system utilizes a broadband laser output of 10-20 nn full width at half maximum tunable across the UV-visible spectral region, thus allowing the simultaneous measurement of multiple molecular species by the differential **optical** absorption spectroscopy technique. To demonstrate the flexibility of the technique for tropospheric composition monitoring we present initial results for both elastic and inelastic (Raman) backscatter and for absorption studies in the spectral regions where NO3 and H2O absorb. In addition, the technique has applicability for a wide range of molecules including O-3, NO2, and other spectrally structured absorbers and for atmospheric temperature sounding, which may be derived from either **rotational** Raman return or temperature dependent absorptions such as those of O-2.

L8 ANSWER 11 OF 29 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1998:323620 CAPLUS
DOCUMENT NUMBER: 129:33900
TITLE: Bandgap-engineering of HgCdTe for **two**-color IR **detector** arrays by **MOVPE**
AUTHOR(S): Mitra, P.; Case, F. C.; Barnes, S. L.; Reine, M. B.; O'Dette, P.; Tobin, S. P.
CORPORATE SOURCE: Lockheed Martin Vought Systems, Dallas, TX, 75265-0003, USA
SOURCE: Materials Research Society Symposium Proceedings (1998), 484(Infrared Applications of Semiconductors II), 233-240
CODEN: MRSPDH; ISSN: 0272-9172
PUBLISHER: Materials Research Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Recent results on OMVPE growth of multilayer 2-color HgCdTe detectors, for simultaneous and independent detection of medium **wavelength** (MW, 3-5 μm) and long **wavelength** (LW, 8-12 μm) bands, are reported. The structures are grown in situ on lattice matched (100) CdZnTe in the double-heterojunction p-n-N-P configuration. A barrier layer is placed between the LW and MW absorber layers to prevent diffusion of MW photocarriers into the LW junction and thereby eliminate spectral crosstalk. X-ray double crystal rocking curve widths are - 45 arc-secs, indicating good epitaxial quality. SIMS depth profile measurements of these 28 μm thick structures show well-defined alloy compns., and As and I doping. SIMS data on 13 films show that good run-to-run repeatability is obtained on thicknesses, compns., and dopant levels with values close to the device design targets. Depth profile of etch pits through the thickness of the films show etch pit densities at 8 + 105-5 + 106 cm-2.

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 12 OF 29 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1999:84627 CAPLUS
DOCUMENT NUMBER: 130:203375
TITLE: Monolithic **two**-color **detector** for short and middle **wavelength** IR using p-HgCdTe/N-HgCdTe/CdTe/GaAs

AUTHOR(S): Park, S. M.; Kim, J. M.; Song, J. H.; Suh, S. H.
CORPORATE SOURCE: Agency for Defense Development, Taejon, 305-600, S. Korea
SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (1998), 3436(Pt. 1, Infrared Technology and Applications XXIV), 72-76
CODEN: PSISDG; ISSN: 0277-786X
PUBLISHER: SPIE-The International Society for Optical Engineering
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A new device concept and implementation procedure of a monolithic **two**-color IR **detector** using **MOVPE** grown p-HgCdTe/N-HgCdTe/CdTe/GaAs is discussed. Newly introduced **two**-color IR **detector** consists of simple n-p-N structure, which can be realized using simple p-N double layer HgCdTe material. Formation of potential barrier in the conduction band of p-N heterojunction is a key to the successful operation of monolithic **two**-color IR **detector**. It prevents photo-generated minority carriers in small band gap region (p-HgCdTe) from diffusing to N-HgCdTe. The monolithic **two**-color IR **detector** was firstly fabricated using **MOVPE** grown p-Hg0.69Cd0.31Te/N-Hg0.64Cd0.36Te/CdTe/GaAs for SW/MWIR. SWIR diode shows RoA value of 752 Ωcm2, while MWIR diode shows RoA value of 140 Ωcm2.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 13 OF 29 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1998:456600 CAPLUS
DOCUMENT NUMBER: 129:283128
TITLE: Application of a novel 8+8 PMT-array detector to light microscopy
AUTHOR(S): Spring, Kenneth R.; Kovbasnjuk, Olga N.; Gibson, Carter C.; Bungay, Peter M.
CORPORATE SOURCE: National Institutes of Health, Bethesda, MD, 20892-1603, USA
SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (1998), 3261(Three-Dimensional and Multidimensional Microscopy: Image Acquisition and Processing V), 17-20
CODEN: PSISDG; ISSN: 0277-786X
PUBLISHER: SPIE-The International Society for Optical Engineering
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A multi-anode photomultiplier tube (PMT) attached to a light microscope was used to measure the low-light-level signals from fluorescent dyes trapped in the extracellular spaces between living, cultured kidney epithelial cells. The detection assembly used photon counting of all 64 channels (maximum count rate 2 MHz) to record the fluorescence produced after the photoactivation of caged fluorophores of different mol. weight and charge. Photoactivation was accomplished by a brief (5 ns, 0.5 mJ) pulse of light at 355 nm from a frequency-tripled Nd:YAG laser. Fluorescence of the uncaged fluorophores was excited by the output of an Ar laser equipped with an acousto-**optical** tunable filter for control of **wavelength** and power. Diffusion coeffs. for the fluorescent indicators in the extracellular spaces were calculated from the spatial and temporal decay of the fluorescence after uncaging of the dye in a small region (3 μm diameter spot) of the 30-90 μm-diameter microscope field. The system magnification was **adjusted** so that each 2.5-mm square PMT channel corresponded to a 12.5-μm square region of the microscope field. The spatial decay of the fluorescence was obtained by sampling **multiple** adjacent **PMT** channels, while the temporal decay was determined from the PMT channel encompassing the uncaging site.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 14 OF 29 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN DUPLICATE 3
ACCESSION NUMBER: 97:528941 SCISEARCH
THE GENUINE ARTICLE: XJ774
TITLE: Multicomponent time-division multiplexed **optical** fibre laser Doppler anemometry
AUTHOR: Lockey R A (Reprint); Tatam R P
CORPORATE SOURCE: CRANFIELD UNIV, SCH MECH ENGN, CTR PHOTON & OPT ENGN, OPT SENSORS GRP, CRANFIELD MK43 0AL, BEDS, ENGLAND (Reprint)
COUNTRY OF AUTHOR: ENGLAND
SOURCE: IEE PROCEEDINGS-OPTOELECTRONICS, (JUN 1997) Vol. 144, No. 3, pp. 168-175.
Publisher: IEE-INST ELEC ENG, MICHAEL FARADAY HOUSE SIX HILLS WAY STEVENAGE, HERTFORD, ENGLAND SG1 2AY.
ISSN: 1350-2433.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: ENGI
LANGUAGE: English
REFERENCE COUNT: 16

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB A multicomponent time-division-multiplexed laser Doppler anemometer is described which uses a single high-frequency pulsed laser diode as a source. Time-division multiplexing requires a single **detector** channel, removing the need for **multiple** detectors and **wavelength** separation optics found in conventional CW laser Doppler systems. Using **optical** fibres to distribute the pulses into each channel and impose a delay between channels reduces the electronic requirements of such an instrument. The suitability of the laser diode and **optical** fibres is assessed and the signal processing needs discussed. Results for a bench-top and a fibre-linked two-dimensional probe system are presented, showing measurements on a **rotating** disc and a water-seeded air jet.

L8 ANSWER 15 OF 29 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN DUPLICATE 4
ACCESSION NUMBER: 97:89954 SCISEARCH
THE GENUINE ARTICLE: WD236
TITLE: Wide field of view, ultracompact static Fourier-transform spectrometer
AUTHOR: Steers D (Reprint); Patterson B A; Sibbett W; Padgett M J
CORPORATE SOURCE: UNIV ST ANDREWS, SCH PHYS & ASTRON, ST ANDREWS KY16 9SS, FIFE, SCOTLAND (Reprint)
COUNTRY OF AUTHOR: SCOTLAND
SOURCE: REVIEW OF SCIENTIFIC INSTRUMENTS, (JAN 1997) Vol. 68, No. 1, Part 1, pp. 30-33.
Publisher: AMER INST PHYSICS, CIRCULATION FULFILLMENT DIV, 500 SUNNYSIDE BLVD, WOODBURY, NY 11797-2999.
ISSN: 0034-6748.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS; ENGI
LANGUAGE: English
REFERENCE COUNT: 12

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The development of a novel static Fourier-transform spectrometer based on two Wollaston prisms, two polarizers, and a compact **two** -dimensional **detector** array is described. The **wavelength** calibration is fixed by the geometry of the prisms and the detector array and is therefore inherently stable. The Wollaston prisms are fabricated from materials with opposite sign on birefringence which gives a significantly increased field of view compared with existing Wollaston prism based Fourier-transform spectrometers. The spectrometer operated in the visible region of the spectrum, has a resolution of 350 cm(-1), an aperture of 6 x 4.6 mm, and a field of view of +/- 10 degrees. The **optical** assembly is interfaced to a laptop computer resulting in a rugged portable instrument with no **moving** parts. (C) 1997

American Institute of Physics.

L8 ANSWER 16 OF 29 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1996:169161 CAPLUS
DOCUMENT NUMBER: 124:218923
TITLE: Apparatus for rapid and accurate analysis of the composition of samples
INVENTOR(S): Anthony, Michael
PATENT ASSIGNEE(S): USA
SOURCE: U.S., 19 pp. Cont.-in-part of U.S. Ser. No. 854,424, abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5489980	A	19960206	US 1995-439436	19950511
PRIORITY APPLN. INFO.:			US 1992-853424	19920318

AB An apparatus comprising **two** light sources, a composite **detector**, a fixed grating, **two** independent slits and a mask with a multiplicity of slits analyzes the spectral composition of samples rapidly and accurately and can transmit such information to other locations by modem. A 1st light source produces a spectrum with broad spectral range, a 2nd light source produces a spectrum with multiple sharp spectral features. The 1st and 2nd light sources are used to produce a sample spectrum and a reference spectrum resp. A portion of the light from each of the two sources is used to calibrate the intensity of the instrument at each **wavelength** measurement. Rapid scanning is achieved by continuous multiplexing of each **wavelength** of light to the detector using a **rotating** mask with a multiplicity of slits. Continuous **wavelength** calibration is achieved by using the reference spectrum to encode a **wavelength** scale as spectrum is acquired. The spectral data can be transmitted by the said apparatus to other locations by modem. The said modem enables a multiplicity of the said apparatus to be used at various locations to perform a common anal. function. For example, a city wide medical network of analyzers may be set up to communicate with a central data base, where analyses on clin. assays may be performed by powerful dedicated computers. In another example, a network of the said apparatus may be set up in an integrated manufacturing environment such as a tobacco manufacturing plant or pharmaceutical manufacturing plant, to accumulate data at several points in the manufacturing process. The apparatus, may be used to rapidly scan and analyze discrete **moving** samples for composition analyses, d. determination, moisture determination, color, and surface uniformity.

L8 ANSWER 17 OF 29 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN DUPLICATE 5
ACCESSION NUMBER: 96:833086 SCISEARCH
THE GENUINE ARTICLE: VR816
TITLE: FIBEROPTIC REMOTE MULTISENSOR SYSTEM BASED ON AN ACOUSTOOPTIC TUNABLE FILTER (AOTF)
AUTHOR: MOREAU F; MOREAU S M; HUEBER D M; VODINH T (Reprint)
CORPORATE SOURCE: OAK RIDGE NATL LAB, ADV MONITORING DEV GRP, HLTH SCI RES DIV, OAK RIDGE, TN, 37831 (Reprint); OAK RIDGE NATL LAB, ADV MONITORING DEV GRP, HLTH SCI RES DIV, OAK RIDGE, TN, 37831
COUNTRY OF AUTHOR: USA
SOURCE: APPLIED SPECTROSCOPY, (OCT 1996) Vol. 50, No. 10, pp. 1295-1300.
ISSN: 0003-7028.

DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS; ENGI
LANGUAGE: ENGLISH
REFERENCE COUNT: 39
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB This paper describes a new fiber-optic multisensor based on an acousto-optic tunable filter (AOTF) and capable of remote sensing using a multioptical fiber array (MOFA). A **two**-dimensional **charge-coupled device** (**CCD**) was used as a detector, and the AOTF was used as a **wavelength** selector. Unlike a tunable grating or prism-based monochromator, an AOTP has no **moving** parts, and an AOTF can be rapidly tuned to any **wavelength** in its operating range within microseconds. The large aperture of the AOTF allows the **optical** signal from over 100 fiber-optic sensors to be measured simultaneously. These characteristics, combined with their small size, make AOTFs an important new alternative to conventional monochromators, especially for spectral multisensing and imaging. A prototype fiber-optic multisensor system has been developed, and its feasibility for simultaneous detection of molecular luminescence signal via fiber-optic probes is demonstrated.

L8 ANSWER 18 OF 29 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 96:544668 SCISEARCH
THE GENUINE ARTICLE: UX613
TITLE: REMOTE SPECTRAL IMAGING-SYSTEM (RSIS) BASED ON AN ACOUSTOOPTIC TUNABLE FILTER (AOTF)
AUTHOR: MOREAU F (Reprint); HUEBER D M; TUAN V D
CORPORATE SOURCE: OAK RIDGE NATL LAB, HLTH SCI RES DIV, ADV MONITORING DEV GRP, OAK RIDGE, TN, 37831 (Reprint)
COUNTRY OF AUTHOR: USA
SOURCE: INSTRUMENTATION SCIENCE & TECHNOLOGY, (1996) Vol. 24, No. 3, pp. 179-193.
ISSN: 1073-9149.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS; ENGI
LANGUAGE: ENGLISH
REFERENCE COUNT: 40
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB This paper describes a new remote spectral imaging system (RSIS) based on an acousto-optic tunable filter (AOTF) capable of remote sensing using an imaging fiberoptic probe (IFP). A **two**-dimensional **charge coupled device** (**CCD**) was used as a detector. The AOTF was used as a **wavelength** selector. Unlike a tunable grating or prism based monochromator, the tunable filter has no **moving** parts, and it can be rapidly tuned to any **wavelength** in its operating range. The large aperture of the AOTF and its high spatial resolution allowed the **optical** image from an IFP to be recorded by a CCD. These characteristics, combined with their small size, make AOTF's important new alternatives to conventional monochromators, especially for spectral multisensing and imaging. A prototype RSIS system, using both IFP and AOTF, was developed and its feasibility for spectral imaging was demonstrated.

L8 ANSWER 19 OF 29 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1996:34811 CAPLUS
DOCUMENT NUMBER: 124:72660
TITLE: Apparatus for monitoring films during MOCVD
INVENTOR(S): Lee, Bun; Kim, Dug Bong; Baek, Jong Hyeob
PATENT ASSIGNEE(S): Electronics and Telecommunications Research Institute, S. Korea
SOURCE: U.S., 6 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5472505	A	19951205	US 1994-359198	19941219

PRIORITY APPLN. INFO.: US 1994-359198 19941219

AB An apparatus for monitoring a film growth is disclosed, in which, when a crystalline thin film is grown by applying an MOCVD (metalorg. CVD method), the variation of the thickness and composition due to certain factors can be detected with real time during the film growing process, and an in-situ **adjustment** is possible. As the **optical detector** for detecting **two** sets of reflected beams which are reflected from the film, a Si detector and a Ge detector were used, the former being suitable for detecting short **wavelength** laser beams, and the latter being suitable for detecting long **wavelength** laser beams. Thus two different **wavelengths** are detected with real time, thereby measuring the thickness and composition of the film.

L8 ANSWER 20 OF 29 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1995:587647 CAPLUS
DOCUMENT NUMBER: 123:21473
TITLE: High-spatial-resolution OH **rotational** temperature measurements in an atmospheric-pressure flame using an indium-based resonance ionization detector
AUTHOR(S): Petrucci, Giuseppe A.; Imbroisi, Denise; Guenard, Robert D.; Smith, Benjamin W.; Winefordner, James D.
CORPORATE SOURCE: Dep. Chemistry, University Florida, Gainesville, FL, 32611, USA
SOURCE: Applied Spectroscopy (1995), 49(5), 655-9
CODEN: APSPA4; ISSN: 0003-7028
PUBLISHER: Society for Applied Spectroscopy
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The use of a resonance ionization photon detector (RID) is described for the measurement of flame temps. with a spatial resolution of <100 μm. The **detector**, based on the **two**-step excitation of In atoms, with subsequent collisional ionization, was used to record **rotational** excitation scans of OH in an atmospheric-pressure acetylene/air flame. The OH excitation spectra were recorded by scanning an excitation laser is the A2Σ+ ← X2IIi (1, 0) vibronic band in the **wavelength** range, 281-288 nm, while simultaneously illuminating the same flame region with the detection laser, tuned to the 6p2P3/2 → 10d2. D5/2 excited-state transition of In at 786.44 nm. The excitation and detection laser beams were made orthogonal in the flame, defining the resolution to be limited by the waist of the excitation beam (100 μm), whose diameter was always smaller than the detection laser beam. A temperature profile of the flame is recorded using both the RID approach and a more conventional laser-induced fluorescence (LIF) approach for comparison. A more structured temperature profile is recorded with the RID owing to its high spatial resolution, whereas the LIF method, which is inherently a line-of-sight method, produces a rather featureless temperature distribution across the flame. Anomalously high flame temps. were recorded at the flame edge with the RID. The cause of these high flame temps. was not determined

L8 ANSWER 21 OF 29 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN DUPLICATE 6
ACCESSION NUMBER: 94:294989 SCISEARCH
THE GENUINE ARTICLE: NK136
TITLE: REAL-TIME BIOMOLECULAR INTERACTION ANALYSIS USING THE RESONANT MIRROR SENSOR
AUTHOR: GODDARD N J (Reprint); POLLARDKNIGHT D; MAULE C H

CORPORATE SOURCE: UMIST, DIAS, POB 88, MANCHESTER M60 1QD, LANCS, ENGLAND (Reprint); INST BIOTECHNOL, CAMBRIDGE CB2 1QT, CAMBS, ENGLAND; FIS APPL SENSOR TECHNOL, CAMBRIDGE CB3 8SL, CAMBS, ENGLAND
COUNTRY OF AUTHOR: ENGLAND
SOURCE: ANALYST, (APR 1994) Vol. 119, No. 4, pp. 583-588. ISSN: 0003-2654.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS; LIFE
LANGUAGE: ENGLISH
REFERENCE COUNT: 14

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The resonant mirror is a planar waveguide **optical** sensor that uses frustrated total internal reflection to couple light in and out of the waveguide layer. As a biosensor, the device exploits the highly selective binding interactions between pairs of biomolecules such as enzyme-substrate, antibody-antigen, hormone-receptor and DNA-DNA (DNA = deoxyribonucleic acid). As many of these species have no absorption bands at convenient (visible) **wavelengths**, refractive index sensing is employed to detect the displacement of water by the higher refractive index analyte as it interacts with its immobilized binding partner. The sensor chip construction is relatively simple, using techniques developed for the production of anti-reflection coatings and interference filters. Preliminary experimental results are presented from two instrumental configurations using a single type of sensor chip. Both types of instrument use linear or **two**-dimensional **charge coupled device** (**CCD**) arrays as detectors, thus avoiding the use of **moving** parts in the instrumentation.

L8 ANSWER 22 OF 29 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN DUPLICATE 7
ACCESSION NUMBER: 94:255035 SCISEARCH
THE GENUINE ARTICLE: NH914
TITLE: INFRARED DETECTOR REQUIREMENTS WHICH DRIVE CRYOGENIC DEVELOPMENT
AUTHOR: MCMURRAY R E (Reprint)
CORPORATE SOURCE: NASA, AMES RES CTR, M-S 244-10, MOFFETT FIELD, CA, 94035 (Reprint)
COUNTRY OF AUTHOR: USA
SOURCE: CRYOGENICS, (MAY 1994) Vol. 34, No. 5, pp. 425-429. ISSN: 0011-2275.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS; ENGI
LANGUAGE: ENGLISH
REFERENCE COUNT: 5

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB In recent years infrared detector technology has progressed from simple discrete detectors, which still represent the state-of-the-art at some infrared **wavelengths**, to large multiplexed **two**-dimensional arrays of **detector** pixels. This evolution has increased the heat load at the focal plane for the detector coolers. Also, there is an increasing **move** towards more electronics on the focal plane itself, and the cryogenic burden can be substantial. In this paper a number of different detector technologies aimed at various **wavelength** regimes will be discussed. Each of the devices has its own optimum operating temperature, and the heat load at that temperature is determined both by the readout electronics and the infrared loading on the focal plane. In general, for lower noise readout operation using conventional FET first stage readouts, increasing the current (and therefore power) on the FET decreases the noise in the channel. For the lowest background observations this power is dominant. At higher infrared backgrounds FET noise is less important, but the **optical** power on the focal plane can become significant. Power and temperature requirements for a broad spectrum of detector types are surveyed and compared.

L8 ANSWER 23 OF 29 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1994:310792 CAPLUS
DOCUMENT NUMBER: 120:310792
TITLE: Low background infrared hybrid focal plane array characterization
AUTHOR(S): Kozlowski, L. J.; Cabelli, S. A.; Cooper, D. E.; Vural, K.
CORPORATE SOURCE: Sci. Cent., Rockwell Int., Thousand Oaks, CA, 91360, USA
SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (1993), 1946(Infrared Detectors and Instrumentation), 199-213
CODEN: PSISDG; ISSN: 0277-786X
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Exploiting hybrid focal plane array methodol. and a flexible multiplexing readout, 128 + 128 FPAs were made and directly compared using several short **wavelength** IR (SWIR) and long **wavelength** (LWIR) detector technologies. The **detector** types include **two** GaAs/AlGaAs quantum well IR photodetectors (QWIP), 1.7 μm InGaAs/InP, and 2.5 μm PV HgCdTe. The tests were performed at operating temps. ranging from 35 K for the LWIR devices to as high as 175 K for the SWIR FPAs. Highlights include the first FPA demonstrations (to the best of the authors' knowledge) of BLIP-limited detectivity (D*) for both LWIR GaAs/AlGaAs QWIP and 1.7 μm PV InGaAs/InP. The 9 μm QWIP peak detectivity is near the theor. background limit at 1.2 + 1010 photons/cm2-s background and 35 K operating temperature The mean D* of 4.5 + 1013 Jones at 8.3 μm peak **wavelength** is 75% of BLIP. A maximum peak D* of 5.7 + 1014 Jones was achieved with the PV InGaAs/InP device at 200 K. This is also believed to be the highest reported FPA-level D* for a staring mosaic array operated at TV-type frame rate and integration time. 2.5 μM HgCdTe FPA sensitivity was ≈70% BLIP for operating temperature ≤162 K and at photon background of 2.45 + 1011 photons/cm2-s. Mean D* was typically 1.62 + 1013 Jones with 99.5% pixel operability. Using f/1.75 optics and 22.5 ms integration time, mean NEΔT of 0.04 K was measured. The excellent staring FPA performance at low photon backgrounds and, in some cases, elevated operating temps. was partly a consequence of the advanced readout with gate modulation input that has self-**adjusting** current gain for enhanced performance at low temps. and backgrounds. For example, current gain of >47,000 yielded input-referred read noise <5 carriers at 22 ms integration time in an InGaAs hybrid FPA. The current gain generally produced near-BLIP FPA signal-to-noise ratio at an easily manageable output-referred noise level of about 1 mV rms.

L8 ANSWER 24 OF 29 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN DUPLICATE 8
ACCESSION NUMBER: 92:640515 SCISEARCH
THE GENUINE ARTICLE: JV133
TITLE: A WIDE **WAVELENGTH** RANGE SPECTROMETER (1150-8000 A) FOR THE RFX REVERSED FIELD PINCH EXPERIMENT
AUTHOR: CARRARO L (Reprint); PUIATTI M E; SCARIN P; VALISA M
CORPORATE SOURCE: EURATOM, ENTE NAZL ENERGIA ATOM, CNR, ASSOC CORSO STATI UNITI, IST GAS IONIZZATI, I-35020 PADUA, ITALY (Reprint)
COUNTRY OF AUTHOR: ITALY
SOURCE: REVIEW OF SCIENTIFIC INSTRUMENTS, (OCT 1992) Vol. 63, No. 10, Part 2, pp. 5188-5190.
ISSN: 0034-6748.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS; ENGI
LANGUAGE: ENGLISH
REFERENCE COUNT: 3
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB This paper describes the vacuum Czerny-Turner spectrometer with a 1.33

m focal length installed on the RFX fusion experiment. The optics are coated with MgF2 and the image intensifier, protected by a vacuum sealed MgF2 Window, features a dual photocathode system, CsTe on one half and S20 on the other; thus the instrument covers efficiently the wide spectral range from the MgF2 limit to the near infrared. Sensitivity at short **wavelengths** is limited by the reflectance of mirrors and the transmittance of the MgF2 window. The detector is completed by a fast **optical** multichannel analyzer whose 1024 photodiodes can be read out in a time of 250 mus. The instrument can also be operated in a duochromator mode by deflecting the diffracted beam onto a second **detector** system, where **two** photomultipliers are applied to two exit slits, one fixed and the other remotely **movable** in such a way that the intensity ratios of two lines can be monitored for diagnostic purposes. Some examples of obtained spectra illustrating the instrument performance and comprising first results from the RFX plasma are presented.

L8 ANSWER 25 OF 29 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1992:580752 CAPLUS
DOCUMENT NUMBER: 117:180752
TITLE: High-fidelity Raman imaging spectrometry: a rapid method using an acoustooptic tunable filter
AUTHOR(S): Treado, Patrick J.; Levin, Ira W.; Lewis, E. Neil
CORPORATE SOURCE: Lab. Chem. Phys., Natl. Inst. Diabetes, Dig. Kidney Dis., Bethesda, MD, 20892, USA
SOURCE: Applied Spectroscopy (1992), 46(8), 1211-16
CODEN: APSPA4; ISSN: 0003-7028
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors describe a technique for obtaining high-fidelity Raman images and Raman spectra. The instrumentation provides the ability to rapidly collect large-format images with the number of image pixels limited only by the number of detector elements in the silicon charge-coupled device (CCD). **Wavelength** selection is achieved with an acoustooptic tunable filter (AOTF), which maintains image fidelity while providing spectral selectivity. Under computer control the AOTF is capable of microsec. tuning speeds within the operating range of the filter (400-1900 nm). The AOTF is integrated with the CCD and holog. Raman filters to comprise an entirely solid-state Raman imager containing no **moving** parts. N operation, the AOTF is placed in front of the CCD and tuned over the desired spectral interval. The **two**-dimensional **CCD** **detector** is employed as a true imaging camera, providing a full multichannel advantage over competitive Raman imaging techniques. Images and spectra are presented of a mixture of dipalmitoylphosphatidylcholine (DPPC) and L-asparagine, which serves as a model system for the study of both lipid/peptide and lipid/protein interactions in intact biol. materials. The Raman images are collected in only several seconds and indicate the efficacy of this rapid technique for discriminating between multiple components in complex matrixes. Addnl., high-quality Raman spectra of the spatially resolved microscopic regions are easily obtained.

L8 ANSWER 26 OF 29 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 92:200444 SCISEARCH
THE GENUINE ARTICLE: HJ915
TITLE: INVESTIGATION OF A CIRCULAR-DICHROISM SPECTROPHOTOMETER AS A LIQUID-CHROMATOGRAPHY DETECTOR FOR ENANTIOMERS - SENSITIVITY, ADVANTAGES AND LIMITATIONS
AUTHOR: ZUKOWSKI J (Reprint); TANG Y B; BERTHOD A; ARMSTRONG D W
CORPORATE SOURCE: UNIV MISSOURI, ROLLA, MO, 65401 (Reprint)
COUNTRY OF AUTHOR: USA
SOURCE: ANALYTICA CHIMICA ACTA, (08 MAR 1992) Vol. 258, No. 1, pp. 83-92.
ISSN: 0003-2670.
DOCUMENT TYPE: Article; Journal

FILE SEGMENT: PHYS
LANGUAGE: ENGLISH
REFERENCE COUNT: 31
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The advent of effective, enantioselective stationary phases in liquid chromatography (LC) has spurred interest in chiroptical detection techniques for method validation and for divining other stereochemical information. Chiral molecules bearing a chromophore have the ability to absorb differently right and left circularly polarized light. This is known as circular dichroism (CD). The use of a commercial CD spectrophotometer as a LC detector is discussed. Various instrumental parameters have a significant influence on the detection sensitivity of chiral compounds and are evaluated. The ability to choose the optimum UV **wavelength** was particularly advantageous. The usefulness and limitations of the **two-detector** approach (UV and CD detectors in series) for enantiomeric ratio determination without chiral resolution is discussed. Finally, the limitations of chiroptic devices as stand-alone detectors are considered.

L8 ANSWER 27 OF 29 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1992:268083 CAPLUS
DOCUMENT NUMBER: 116:268083
TITLE: A unique new temperature compensated **multiple wavelength** mini-IR **detector** for monitoring parts per million to percent concentrations in gases and liquids
AUTHOR(S): Downie, R. A.
CORPORATE SOURCE: Teledyne Anal. Instrum., City of Industry, CA, USA
SOURCE: Advances in Instrumentation and Control (1991), 46(2), 1643-52
CODEN: AINCEV; ISSN: 1054-0032
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A low cost, nondispersive, **optical**, single-beam detector with built-in ambient temperature compensation has been perfected where single or multiple measurements are required. Measurement capabilities so far cover wide spectrum energies from visible (0.4 μm) to mid-IR (20 μm) **wavelengths** without using a **moving** chopper wheel or sophisticated diode-array configuration. Using a unique patented hermetically sealed thermopile design, the detector is combined into an extremely simple compact IR **optical** bench with no **moving** parts without sacrificing accuracy or stability. Other advantages, such as small size, low power requirements in battery backup/portable applications, and remote or stand alone installations are discussed. OEM/NIR/mid-IR applications are also presented.

L8 ANSWER 28 OF 29 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 91:349009 SCISEARCH
THE GENUINE ARTICLE: FQ939
TITLE: TECHNIQUE FOR 3-DIMENSIONAL MEASUREMENTS OF THE TIME DEVELOPMENT OF TURBULENT FLAMES
AUTHOR: FRANK J H (Reprint); LYONS K M; LONG M B
CORPORATE SOURCE: YALE UNIV, DEPT MECH ENGN, NEW HAVEN, CT, 06520 (Reprint); YALE UNIV, CTR LASER DIAGNOST, NEW HAVEN, CT, 06520
COUNTRY OF AUTHOR: USA
SOURCE: OPTICS LETTERS, (1991) Vol. 16, No. 12, pp. 958-960.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS; ENGI
LANGUAGE: ENGLISH
REFERENCE COUNT: 14
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB A three-dimensional imaging technique has been developed that permits the investigation of the time development of a scalar in turbulent reacting flows. An aerosol-seeded premixed flame was illuminated by four

closely spaced parallel laser sheets of different **wavelength**. Lorenz-Mie scattering from the four illumination sheets was imaged onto an intensified **two**-dimensional **charge-coupled-device** array. Bandpass filters and a multi-image **optical** component in the collection optics allowed individual sheets to be imaged onto different areas of the charge-coupled-device array. A double-pulsed Nd:YAG laser was used in conjunction with a **rotating** mirror in the collection optics to enable instantaneous three-dimensional images to be obtained at two times separated by 100-mu-s.

L8 ANSWER 29 OF 29 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1964:48826 CAPLUS
DOCUMENT NUMBER: 60:48826
ORIGINAL REFERENCE NO.: 60:8604d-f
TITLE: Design and construction of an infrared polychromator. I. **Two-wavelength, two-detector** type
AUTHOR(S): Mashiko, Yoichiro; Tomita, Hiroshi; Yoshida, Kasumi
CORPORATE SOURCE: Govt. Chem. Ind. Res. Inst. Tokyo
SOURCE: Kogyo Kagaku Zasshi (1963), 66(6), 777-81
CODEN: KGKZA7; ISSN: 0368-5462
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB The **optical** system, in an air-tight, temperature-controlled metal box was of the double beam, single pass type, equipped with a 60° NaCl prism. The key band of one component could be chosen in the region 2-15 μ spontaneously by manually **rotating** the Littrow mirror, and that of the other, by **moving** the slit. Resolution, examined by observing the absorption spectrum of a polystyrene film, was found as high as that of the usual spectrophotometer, except in the 3-5-μ region. The mixts. calibrated for were: C6H6-cyclohexane, o-xylene-m-xylene, o-xylene-p-xylene, and m-xylene-p-xylene.

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L43: Entry 1 of 1 File: PGPB Sep 19, 2002

DOCUMENT-IDENTIFIER: US 20020132261 A1
TITLE: Multi-featured arrays with reflective coating

Series Code and Application Number:
10/080641

Summary of Invention Paragraph:
[0016] The present invention further provides a computer program product for use in an apparatus of the present invention wherein the detection angle (or interrogating light wavelength) is adjustable. Such a computer program product includes a computer readable storage medium having a computer program stored thereon which, when loaded into a computer of the apparatus, causes it to adjust the detection angle (or interrogating light wavelength) based on an identification ("ID") read (preferably machine read) from an array package carrying the array (with the required information being retrieved from the read ID or from a local or remote database).

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